ANNEX C.

GLOSSARY

A

Adaptation
In climate change discussions, refers to actions that respond to climate change risks and/or impacts by reducing sensitivity to climate variables and/or increasing coping capacity

Aerosols
A substance packaged under pressure with a gaseous propellant for release as a spray of fine particles

Ambient temperatures
The temperature of the air surrounding a power supply or heating/cooling medium

Analytic-deliberative practices
Combining systematic analysis with processes for collective qualitative consideration of broader issues

Aquifer
An underground bed or layer of earth, gravel, or porous stone that yields water

B

Biodiesel
An oxygenated fuel, primarily alkyl (methyl or ethyl) esters, produced from a range of biomass-derived feedstocks including oilseeds, waste vegetable oils, cooking oil, animal fats and trap grease, which can be used in blends or in "neat" form in compression-ignition engines to reduce emissions and improve engine performance

Btus
British thermal units, a quantity of energy

Building equipment
Energy-using equipment within a building, such as electric appliances

Building shell
The external envelope of a building, including foundation, floor, walls, windows, outside doors, and roof

Building stock
The total quantity of buildings in an area or sector of interest

C

Canadian model
A climate change projection model from the Canadian Climate Change Centre (CGCM1), used in the U.S. National Assessment of Possible Consequences of Climate Variability and Change (2001)

Cap-and-trade
A market-based system of limiting emissions in which a limited number of emissions permits are issued in the aggregate (cap); these permits are then freely exchangeable in markets (trade)

Cellulosic
Pertaining to cellulose, a constituent of plant tissues and fibers

Climate change
Changes in climate that depart from normal variability, representing significant changes in averages and/or extremes

Climate change impacts
Effects of climate changes such as temperature change, precipitation change, severe weather events, and sea level rise on human and/or natural systems

Climate change related policies
Public policy interventions in response to concerns about or impacts of climate change

Climate forcing effect
Increases in certain trace gas molecules in the atmosphere that change the balance between incoming solar radiation and re-radiation of energy into space, leading to long-term atmospheric warming

Climate variability
Changes in climate around averages, not necessarily associated with climate change

Climate-sensitive
Refers to systems or phenomena whose behavior is noticeably affected by differences in climate

Closed-cycle cooling
A method of cooling power plants in which water is withdrawn from a body of water, passed through the facility to cool power-production processes, cooled down in a cooling tower or similar method, and then reused for cooling

Combined cycle
An electric-power generating method in which combustible gases are burned in a combustion turbine (topping cycle) and high-temperature gases from that operation are used to raise steam that is passed through a steam turbine (bottoming cycle). Both cycles drive electric generators

D

Delivery forms
Forms in which energy is delivered to users: solid, liquid, gaseous, electricity

Demographic
Related to the size, growth, and distribution of human populations

Discrete-continuous choice models
A family of economic models in which the probability of a handful of choices (e.g., whether or not to select a particular heating technology) are modeled mathematically as a function of continuous variables such as income and price

Distribution systems
Systems for moving energy delivery forms from producers to users

E

Econometric
A field of economics that applies statistical procedures to mathematical models

Elasticities
Refers to changes in one variable as the result of changes in another variable

Empirical
Derived from observation or experiment, generally implying quantitative data

Energy consumption
The amount of fuels and electricity (measured in common units such as British thermal units or Btus) utilized during a period of time to provide a useful service such as heating, cooling, or transportation

Energy conversion
Changing energy-bearing substances from one form to another; e.g., petroleum refining or electric power generation

Energy demand
The quantities of energy desired in the marketplace at various prices.

Energy infrastructure
The capital equipment used to supply energy; e.g., power plants, refineries, natural gas pipelines, electric power lines and substations, etc.

Energy intensity
The amount of energy consumed per unit of desired service

Energy markets
Groups of buyers and sellers of energy goods and services and the institutions that make such exchanges possible

Energy prices
Prices of petroleum and petroleum fuels, natural gas and manufactured gases, coal, uranium fuels, other fuels, and electricity, formed in energy markets via buying and selling processes

Energy production
Extraction, conversion, and transportation of fuels and electricity to ultimate end use

Energy security
Reliable and predictable supplies of fuels and electricity in national markets at stable prices, usually associated with the concerns about reliability of foreign supplies

Energy use
See energy consumption

Ethanol
An alcohol fuel produced chemically from ethylene or biologically from the fermentation of various sugars from carbohydrates found in agricultural crops and cellulosic residues from crops or wood. Often made from plants such as corn and typically blended in various proportions with conventional gasoline to make transportation fuel (gasohol)

Extreme weather events
Weather events that are infrequent or unusual in their magnitude or intensity

F

Fossil fuels
Hydrocarbon fuels derived from fossils: coal, petroleum, natural gas

Fuel types
End-use delivery forms for energy: solid, liquid, gaseous, electricity

G

Gas turbine
A rotary engine that extracts energy from a flow of combustion gas

Global Change Research Act of 1990
An act of the U.S. Congress that established the U.S. Global Change Research Program and called for periodic assessments of climate change implications for the U.S.

H

Hadley Centre Model
A well-known British model for projecting climate change

Heating loads
The amounts of energy necessary to keep the internal temperature in a building above a specific temperature range

Hydropower
Hydroelectric power, derived from the energy value of running water

I

Indirect effects
Effects derived not from the primary driver of interest but from effects of that driver on another system, process, or phenomenon

Integrated Resource Planning
An approach to electric utility planning that integrates demand-side planning with supply-side planning

Intensity
A measure of concentration, such as the amount of energy consumed for a particular purpose

K

Knowledge base
The stock of knowledge about a particular topic

kWh
Kilowatt hour, a measure of electricity delivered or consumed

L

Likelihood
A measure of probability and/or level of confidence

Long-run
The relatively far future

M

Market penetration
The degree to which a new technology or practice enters a market for a type of equipment or service, usually measured as a percentage of sales

Market saturation
The highest percentage of a market that can be captured by a type of equipment, practice, or process

Mitigation
In climate change discussions, refers to actions that respond to concerns about climate change by reducing greenhouse gas emissions or enhancing sinks

O

Once-through cooling
As distinct from the use of cooling towers, the practice in power plants of taking in water from a body of water (e.g., a river), using it to cool the power plant, and releasing the water back to the body of water after a single pass through the plant

P

Peaking load units
Electricity supply units designed to respond to demands, often short-lived, that are significantly above normal base loads

Portfolio standards
Guidelines or requirements that total electricity supply include one or more set minimums for particular sources, such as renewable energy

Power plants
Facilities that produce electricity

Primary energy
The amount of energy embodied in natural resources (e.g., coal, crude petroleum, sunlight) before transformation by humans. Also known as source energy

Projections
Characterizations of the future, often quantitative either from extrapolations of historical trends or from models

Prospectus

A formal summary of a proposed venture or project or a document describing the chief features of a proposed activity

Q

Quad
Quadrillion Btus

Qualitative
Characterized by units of measure that are not numerical

R

R&D
Research and development

Renewable energy
Energy based on resources that are naturally renewed over time periods equivalent to resource withdrawals

Risk management
Practices followed by companies and individuals to limit exposure to hazards and to limit the consequences of remaining exposure

S

Scenario
A characterization of changes in the future, often associated with quantitative projections of variables of interest

Seasonal
Pertaining to a season of the year, as in winter or summer

Sectors
Subdivisions of a larger population, most often subdivisions of an economy such as residential, commercial, and industrial

Shell
See "building shell"

Short-run
The relatively near future

Simulation models
Mathematical models designed to approximate the performance of a system (e.g., the energy market or the world's climate) and commonly used to quantitatively forecast elements of that system's performance

Site energy consumption
The amount of energy consumed at the point of end use, not accounting for conversion losses

Solar radiation
The Sun's radiant energy (in the context of this study) as deposited on the Earth in all wavelengths

Space conditioning
Human interventions to modify the temperature of built spaces, including cooling and heating

Space cooling
Space conditioning processes used to reduce the temperature in built spaces

Space heating
Space conditioning processes used to increase the temperature in built spaces

Spatial scale
Geographical size

Stakeholders
Individuals, groups, and/or institutions with a stake in the outcome of a decision-making process

Statistical analysis
Analyzing collected data for the purposes of summarizing information to make it more usable and/or making generalizations about a population based on a sample drawn from that population

Stochastic
Characterized by risk, randomness, or uncertainty. Random or probabilistic but with some direction

Strategic Petroleum Reserve
A U.S. national program and set of facilities to store petroleum as a protection against risks of supply disruptions

T

Take back
A consumer reaction wherein beneficiaries of cost reductions from improvement to a technology or process undermine the improvement by using more of the improved technology or process; e.g., be setting the thermostat higher when a building is better insulated and therefore less expensive to heat

Thermal power plant
A facility that produces electricity from heat

Thermoelectric
See thermal power plant

Time series
A series of measurements occurring over a period of time

Transient weather events
Very short-lived weather happenings (e.g., thunderstorms, tornadoes) as opposed to general, long-term changes in temperature, precipitation, etc.

U

Uncertainties
Unknowns that limit the completeness of an explanation or the precision and accuracy of a prediction

Urban form
The physical configuration and pattern of an urbanized area

Urban heat islands
The semipermanent warming of up to several degrees in urban areas compared to nearby rural areas, due to density of population, high use of energy, and prevalence of solar energy absorbing and reradiating surfaces such as concrete buildings and streets

V

Vulnerability

The degree to which a system is susceptible to, or unable to cope with, adverse effects of *climate change*, including *climate variability* and extremes. Vulnerability is a function of the character, magnitude, and rate of climate variation to which a system is exposed, its *sensitivity*, and its *adaptive capacity*